

## Scope and Sequence

Subject/Title of Unit	Grade	6 Weeks	Estimated Time Frame (# of days)
Aquatic Science Water Chemistry	11 - 12	2nd Six Weeks	6 - 7 Weeks
TEKS/Student Expectations		Examples/Specifications:	
<p><b>Aq.1 Strand: Field &amp; laboratory Investigation</b>            (A) demonstrate safe practices during field and laboratory investigations; and            (B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.</p> <p><b>Aq.2 Strand: Scientific Inquiry—Field &amp; Laboratory</b>            (A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology;            (B) collect data and make measurements with precision;            (C) express and manipulate quantities using mathematical procedures such as dimensional analysis, scientific notation, and significant figures.            (D) organize, analyze, evaluate, make inferences, and predict trends from data; and            (E) communicate valid conclusions.</p> <p><b>Aq.3 Strand: Critical Thinking, Problem Solving &amp; Decision Making</b>            (A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;            (B) make responsible choices in selecting everyday products and services using scientific information;            (C) evaluate the impact of research on scientific thought, society, and the environment;            (D) describe the connection between environmental science and future careers; and            (E) research and describe the history of environmental science and contributions of scientists</p> <p><b>Aq.4 Strand: Components of Aquatic Ecosystems.</b>            (A) differentiate among freshwater, brackish, and saltwater</p>		<p>Students will answer:</p> <ul style="list-style-type: none"> <li>• How do the properties of sea water allow you to predict its behavior?</li> <li>• What creates tidal currents?</li> <li>• The percent composition of seawater dictates its characteristics and behavior.</li> </ul>	

<p>ecosystems;  (B) research and identify biological, chemical, geological, and physical components of an aquatic ecosystem; and  <b>Aq.6 Strand: Roles of Cycles in Aquatic Environments.</b>  (B) interpret the role of aquatic systems in climate and weather; and  (C) collect and evaluate global environmental data using technology.  <b>Aq.9 Strand: Geological Phenomena &amp; Fluid Dynamics Affect Aquatic Systems.</b>  (A) demonstrate the principles of fluid dynamics including Archimedes' and Bernoulli's Principles and hydrostatic pressure;  (B) identify interrelationships of plate tectonics, ocean currents, climates, and biomes; and  (C) research and describe fluid dynamics in an upwelling.</p>	
<p><b>Language of Instruction:</b></p>	<p><b>Instructional Resources/Textbook Correlations:</b></p>

**TOPICS:**

- 1. Properties of Sea Water**
  - a. Salinity / temp. / density (thermohaline gradient)**
- 2. Comparison of Oceans**
  - a. Varying compositions due to ice melt, evaporation, etc...)**
- 3. Sea Floor Features**
  - a. Plate tectonics**
  - b. Sea floor imaging (sonar, satellite, etc...) Bathymetry**
- 4. Waves**
  - a. Fluid dynamics (Bernoulli's principle / Archimedes)**
- 5. Tides**
  - a. Lunar correlation**
  - b. Earth's orbit (Apogee & Perigee)**
- 6. Currents**
  - a. Density vs Salinity, temp. and depth (Ocean conveyor belt)**

**Weblinks/Other Resources:**

Textbook:  
[Fluid Earth](#)  
[Living Ocean](#)  
TexTeams Chemistry, Physics Vista

**Evaluation/External Assessment/Local Assessment:**

**Best Instruction Timeline:**

Daily Work Homework Teacher – designed test Aquariums	
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